Remarks

Status of the Claims

Claims 1-7, and 13 are pending in this application. Claims 8-12 were previously withdrawn from consideration under a restriction requirement. Claim 3 is allowed. Claims 1-2, 4, and 7 stand rejected. Dependent claims 5, 6, and 13 are objected to, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 5, 6, and 13 are currently amended. No new matter has been introduced into the specification by these amendments.

Applicants note the withdrawal of rejections under 35 U.S.C. §102(b).

Allowable Subject Matter:

Applicants have rewritten dependent claims 5-6 and 13 to depend from an allowable independent claim.

Accordingly, Applicants respectfully request that the objections pending against currently amended claims 5-6 and 13 be withdrawn and the claims promptly allowed.

Patentability Under 35 U.S.C. §112:

A. Amended claims 1, 2, and 4, and original claim 7 are enabled under the standards for 35 USC 112, first paragraph.

Claims 1 and 2 have been amended to specify that any mutant, parts, or fragments have a degree of sequence identity, at the nucleotide level, with the nucleotide sequence of SEQ ID NO:1 of at least 80%. These amendments are supported in the specification at page 2, paragraphs [0028] and [0029].

The amended claims 1 and 2 require a functionality of the claimed subject matter: "a polypeptide sequence… having hemipteran myosin light chain kinase activity; …"

Applicants have further amended the format of claims 1, 2, and 4 to more clearly indicate that this is the case.

Claim 4 has been amended to require at least 100 nucleotides in a fragment of the claimed invention. This amendment finds support in the specification at page 2, paragraph [0025].

The *Wands* factors as set out by the Examiner are appropriately reviewed for enablement of the claimed invention. However, undue experimentation to practice the invention is not required. We agree with the Examiner that the field of molecular biology is regarded as a relatively unpredictable art. However, the other *Wands* factors, especially "the state of the art", "amount of direction or guidance presented," and "the relative skill of those in the art" weigh in favor of enablement of the invention as claimed. The techniques needed to practice the invention were well known to those of skill in the art for many years at the time of the invention. The specification fully discloses methods to "identify, derive, or isolate natural and synthetic mutants of the nucleotide sequences of SEQ ID NO: 1." It is also expected that the skilled person would be able to provide or derive polypeptides having the sequences (as defined) of SEQ ID NO: 2 by means of protein expression. (See especially, paragraphs 0008-0035.) The specification also describes or provides guidance to those of skill in the art how to assess encoded proteins that have biological activity as a hemipteran myosin light chain kinase (see especially paragraphs 0036-0038). These techniques were found to be well known by those of skill in the art by the Federal Circuit as early as 1993. (See *In re Bell*, 991 F2d 781 (CAFC 1993) and *In re Deuel*, 51 3d 1152 (CAFC 1995).

Furthermore, as recently explained in the precedential opinion of *Ex parte Kubin* (PTO Bd. App., May 31, 2007), a rejection for lack of enablement on the basis of undue experimentation is not appropriate where the amount of experimentation to practice the full scope of the claimed invention would have been routine, even if extensive. Since, as shown above, the methods used to practice the full scope of Applicants' invention are

routine, even if extensive, the pending rejection for lack of enablement should be withdrawn.

In light of the above discussion, reconsideration of amended claims 1, 2, 4, and original claim 7, withdrawal of the rejection for lack of enablement, and allowance are respectfully requested.

B. Claims 1-2, 4, and 7, as amended, are supported by a written description complying with the standards of 35 USC §112, first paragraph.

Claims 1, 2, 4, and 7 were rejected as not supported by adequate written description, more particularly for not providing examples of which other nucleotides besides the bases from DNA sequences encoding SEQ ID NO.: 2 must be incorporated in the claimed fragments.

The written description requirement of 35 USC §112 concerns how to make the claimed invention. Traditional analysis looks to whether the Applicant "had possession" of the claimed genus as of the filing date of the application. This is a factual inquiry, intended to exclude extending the scope of the claim to subject matter exceeding a "reasonable correlation" with the scope of disclosure. The written description complies with § 112 if a person of ordinary skill in the art would be expected to make sequence fragments of SEQ ID NO:1 having at least 15 nucleotides and retaining the functional utility of the full length sequence.

As established above in the discussion of enablement, Applicants have sufficiently enabled the claimed subject matter. Therefore, Applicants also satisfied the written description requirement. (See *Lizardtech v. Earth Resource Mapping*, 424 F3d 1336, 1334-45, (CAFC 2005).) At the time Applicants' application was filed the level of skill in the art of molecular biology was high. Methods of making the claimed nucleic acid sequences and screening for activity were well known in the art and described in the

specification. Applicants disclosed a full length nucleotide sequence of the isolated nucleic acid. They also disclosed a full length polypeptide encoded by the disclosed nucleotide sequence. Disclosure of the full length sequences inherently includes disclosure to of each claimed fragment having the claimed functionality. The claims are supported by disclosure directed to biological material having hemipteran myosin light chain kinase activity. Claims 1 and 2 have been amended to specifically refer to this function of the biological materials.

In light of the above discussion, reconsideration of amended claims 1-2, and 4, and original claim 7, and withdrawal of the rejection for lack of written description are respectfully requested.

Conclusion

In view of the foregoing, Applicants respectfully assert that the independent claims patentably define the present invention over the citation of record. Further, the dependent claims should also be allowable for the same reasons as their respective base claims and further due to the additional features that they recite. Therefore, Applicants request reconsideration, withdrawal of the rejections and objections, and early allowance of the presented claims. Separate and individual consideration of the dependent claims is respectfully requested.

Respectfully submitted,

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December 21, 2007

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